SIERRA WATER TRUST

Building Capacity in the Sierra to Assess and Fulfill Critical Flow Augmentation Needs

FINAL PROJECT REPORT

Submitted To: Sierra Nevada Conservancy

Project Reference #: SNC 070171

FEBRUARY 2012

Sierra Nevada Conservancy-Final Report

Sierra Nevada Conservancy Grant Program
Safe Drinking Water, Water Quality and Supply, Flood Control
River and Coastal Protection Act of 2008 (Proposition 84)

Grantee Name: American Rivers

Project title: Sierra Water Trust: Building Capacity in the Sierra Nevada to Assess and Fulfill Critical Flow Augmentation Needs

SNC Reference Number: SNC-070171 **Submittal Date:** 02/29/12

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Check one:

_____ 6-Month Progress Report
__X__ Final Report

A. Progress Report Summary:

American Rivers (AR) in collaboration with the Natural Heritage Institute (NHI) and Sierra Nevada Alliance (SNA), as well as several local watershed organizations, including: Feather River Land Trust, South Yuba River Citizen's League (SYRCL), Friends of Deer Creek, and Alpine Watershed Group initiated an effort to improve instream flows in the Sierra Nevada Region through the Sierra Water Trust Project. This effort was funded by the Sierra Nevada Conservancy and US EPA. The overarching objectives of the project were to build the capacity of Sierra-based organizations to examine watershed problems in a broader hydrologic context; facilitate the use of river science in monitoring and managing water availability and use; and employ water rights acquisition as a tool for stream restoration.

The following is a summary of accomplishments based on the project scope:

1. *Developing and presenting to the Regional Water Trust Roundtable a package of performance measures to track and report output and outcomes of the project*

The project team developed a workplan with specific outputs that we measured progress towards report goals. In addition, we developed three outcome performance measures that aligned with those of SNC that are described in section F of this report. Early in the project, we decided that it was premature to develop a Regional Water Trust Roundtable given the significant barriers at a state level to water transfers

2. *Working with watershed organizations, RCDs, irrigation districts, land trusts and other stakeholders to define the process for water rights acquisition, including using interviews and other research to develop a report identifying legal, institutional and social barriers to such acquisitions, identifying benefits and incentives for such acquisitions, and evaluating experiences in the Pacific Northwest as potential models for how to structure such acquisitions in the Sierra*

   We developed a comprehensive Sierra Stakeholder List focused on a broad range of individuals and organizations with interest in water transfers. This list was used to conduct stakeholder interviews and will be used in the future for outreach activities. In addition, we met with and interviewed key leaders in water transfers in Oregon and Washington to learn of the evolution and activities of water transfers in the PNW. Through evaluation of California water law and examination of both formal and informal methods currently used to protect and enhance instream flows we were able to identify the main obstacles and opportunities for water transfers and acquisitions in California. We found that while informal instream flow dedication methods were often flexible and efficient for short-term instream flow protection efforts; they require a local entity to both manage and monitor transactions and are not formally recognized or enforced under California water law. A formal dedication under Water Code Section 1707 provides protection of the water right from forfeiture as well as recognition and enforceability of the instream flow dedication under California water law but, currently involves a lengthy and costly application process that is not well defined. These and other findings are described in more detail in our Barriers and Benefits Report.

3. *Building stakeholder capacity to complete water rights acquisitions through community and stakeholder outreach, technical information sharing, workshop trainings and follow-up support*

   We successfully increased awareness and understanding of the importance of flow as a key restoration variable, and the opportunities associated with using water rights acquisition as a tool toward increasing instream flows. In partnership with the Sierra Nevada Alliance, we achieved this through the design and implementation of a project Outreach Strategy. This effort included creation and distribution of two in-depth Factsheets, a Poster, development of a comprehensive Sierra Stakeholder List followed by a series of stakeholder interviews, implementation of a streamflow training workshop, and an online presence on both AR and SNA websites. This work is described in detail below.

4. *Instituting a small-grant program to provide targeted technical assistance to 2-3 organizations in the Sierra to assess flow augmentation needs for habitat and water quality in their watersheds and publish and present findings at regional and western conferences and workshops*

We piloted four on-the-ground projects with watershed groups and land trusts focused on understanding the hydrologic context of their work and how to move towards targeted instream flows. These projects were successfully developed and completed through the small grants program, including partnerships with the Feather River Land Trust, Alpine Watershed Group, Friends of Deer Creek, and South Yuba River Citizen's League. This work is described in detail below. We also presented a summary of this work to EPA watershed branch staff in San Francisco.

5. *Promoting strategic water rights acquisitions through identification of willing sellers, consultation with the SWRCB, technical assistance to evaluate legal issues, drafting of an acquisition agreement, drafting of appraisal methodology, determination of fair market value, and completion of CEQA requirements*

   The project team worked with the Feather River Land Trust on the Heart K Ranch as an initial case study for water rights dedications. This work included site visits, legal research, and consultation with regulatory agencies on water right and transfer procedures. Results of this work are documented in the document: *Alternatives for Water Conservation and Management for the Heart K Ranch.*

   In addition to site-specific work associated with strategic water rights dedications we also helped to create and continue to facilitate the Small Watershed Instream Flow Transfers Working Group (SWIFT) to overcome some of the barriers identified in the Barriers and Benefits Report. SWIFT brings together the primary individuals and organizations working on instream flow dedications in California and aims to identify and reduce obstacles to instream flow transfers by developing practical guidelines and recommendations for successful and efficient water rights transfers to instream use, particularly for transactions in smaller tributary streams with critical fish needs. As a part of this project, we also developed a legal assessment and recommendations for water rights and transfer options in the Sierra.

6. *Developing a pilot adaptive management and monitoring plan to determine whether trust water dedicated to instream flows will have the desired impact*

   Early in the project, we determined that this task was premature and instead focused our actions on initiating the SWIFT working group, which is described above and further on in the report.

7. *Disseminating information through regular reporting as required in this grant agreement*

   American Rivers submitted progress reports and relevant project materials on time to SNC at scheduled times.

B. Deliverables or Outcomes completed during this Reporting Period or Milestones Achieved:

Outreach and Education: As part of the Sierra Water Trust project the Project Team developed and implemented an Outreach Strategy that included a variety of methods to build stakeholder capacity and increase the general understanding of the opportunities and potential uses for trust water in the Sierra.

The following is a summary of project deliverables and outcomes related to our efforts to build capacity in the Sierra:

- Sierra Stakeholder List: a comprehensive, working stakeholder list focused on a broad range of individuals and organizations with interest in water transfers. This list was used to conduct stakeholder interviews and will be used in the future for outreach activities.
- From the Stakeholder List, we conducted in-depth interviews with the following individuals and organizations:
    - Sari Sommarstrom, Scott River Water Trust
    - Stafford Lehr, California Department of Fish and Game
    - Kent Smith, California Department of Fish and Game
    - Cindy Wise, California State Water Resources Control Board
    - Fran Spivey-Weber, California State Water Resources Control Board
    - Karen Prgovcica, California State Water Resources Control Board
    - Tom Howard, California State Water Resources Control Board
    - Judith Unsicker, California State Water Resources Control Board
    - Leo Winternitz, The Nature Conservancy
    - Nita Vail, California Rangeland Trust
    - Tina Batt, California Rangeland Trust
    - Ed James, Carson Water Sub-Conservancy District
    - Brian Johnson, Trout Unlimited
    - Mary Ann King, Trout Unlimited
    - Claire Thorp, National Fish and Wildlife Foundation
    - Andrew Purkey, National Fish and Wildlife Foundation
    - Ron Nelson, Nevada Irrigation District
    - Zachary Tilman, Deschutes River Conservancy
    - Katie Burdick, CABY IRWMP

- Factsheets: two in-depth factsheets were developed that discuss: 1) the importance and steps for monitoring and assessing streamflow and flow augmentation needs; and 2) voluntary water dedications for healthy streams and rivers.
- Poster: a concept poster was developed and completed that depicts issues of instream flow volume and quality, and contrasting efficient versus wasteful practices in terms of how we use and conserve water and how those practices link to healthy streams.

- Presentations/Trainings: A Flow Assessment and Augmentation Workshop was held at the SNA Annual Conference in August of 2010. The workshop included three classroom presentations and a field component teaching participants methods for measuring and monitoring streamflow (See attached participation list and workshop summary including the presentation itself). There were 28 participants representing many different interests and organizations including watershed groups, university, consulting firms, tribes, government agencies, and non-profits. In addition, a Water Transfer workshop was conducted at the 2009 SNA Annual Conference and included presentations from American Rivers and Nevada Irrigation District.

Small Watershed Instream Flow Transfers (SWIFT) Working Group: SWIFT was formed in early 2011 with leadership from American Rivers in an effort to collaboratively identify and reduce obstacles to instream flow transfers by developing practical guidelines and recommendations for successful and efficient water rights transfers to instream use, particularly for transactions in smaller tributary and coastal streams with critical fish needs such as the rivers and creeks in the Sierra. More specifically, the goals of the group are to improve the quality of Section 1707 petitions submitted to the SWRCB Division of Water Rights, increase the efficiency of SWRCB review processes, and ultimately increase participation in instream flow programs and projects to enhance the protection of beneficial uses for California streams and rivers. SWIFT is composed of individuals and entities with 1707 petition experience including staff from water trusts and conservation organizations as well as water rights attorneys. The SWIFT Working Group has started to convene both in-person meetings and via conference calls on a regular basis.

The following is a summary of outcomes related to the SWIFT Working Group's efforts to date:

- SWIFT Working Group Goals: The Working Group developed a one page summary of group goals and objectives for improving instream flow dedications in California
- Collaboration: The SWIFT Working Group has initiated discussions with both SWRCB and DFG staff about working collaboratively to address some of the key issues that currently act as barriers to the successful dedication of water to instream flow.
- Development of a GAP analysis to determine what are both the short-term and the long-term needs of both SWIFT, as well as a larger "California Water Trust."

Capacity-building in Sierra Watersheds: Through our small grants program, we completed four successful projects aimed at increasing the capacity of local watershed groups to monitor, assess, and address flow augmentation needs and water rights in their watersheds. The program provided funding for staff time and equipment, as well as technical assistance to each group. Each grant was tailored to the specific needs of the organization. Working with the Sierra Nevada Alliance, we identified groups that would benefit from this type of capacity-building, had staff to devote to these activities, could provide the required match, and could also sustain the work over time. For each of these groups, we developed a detailed scope of work and timeline to ensure that our mutual expectations were clear regarding the work to be done, and respective roles.

The following is a summary of the activities conducted under each of the four small grants projects:

- **Feather River Land Trust**. The focus of our work with the Feather River Land Trust was to identify and analyze potential water transfers on the Heart K Ranch. We first developed a workplan and strategy to fill organizational needs and increase capacity around these issues. The result was a comprehensive report entitled *Alternatives for Water Conservation and Management for the Heart K Ranch*, which provides an analysis of several alternatives for improving irrigation efficiency, water management, water transfers, and instream flows at the Heart K Ranch. This document will be useful in seeking funding to implement the preferred water management approaches.

- **Alpine Watershed Group**. The subgrant with the Alpine Watershed Group provided funding and assistance in the Upper Carson River Watershed to: 1) analyze existing hydrological records; 2) identify areas in need of flow monitoring; 3) increase streamflow monitoring efforts in these identified reaches; and 4) conduct a preliminary survey of water rights and gage public receptivity to water transfers. The project convened a core group of volunteers and provided training to this group to synthesize existing data and records for the area to identify priority monitoring sites, conduct streamflow measurements and monitoring activities, install four continuous recording flow gaging stations, and complete a voluntary mail-in water rights survey in the community. The flow gages will help determine critical areas in need of flow augmentation, and will help in the planning phases for future restoration projects, including our Hope Valley Meadow Restoration Project. We're also using our flow gage network to better characterize the existing flow regime in Red Lake Creek as a result of releases out of Red Lake, managed by the California Department of Fish and Game (DFG). This will enable us to develop a more scientifically-based management regime of flows out of Red Lake, something that has been identified as a potential source of flow augmentation and habitat improvement in both Red Lake Creek and the West Fork Carson River, which converge in Hope Valley Meadow. CDFG is interested in improving management of Red Lake and has been a valuable partner in pursuing these goals.

- **Friends of Deer Creek**. The subgrant with Friends of Deer Creek aimed to improve flow monitoring in the Deer Creek Watershed, determine flow augmentation needs in the watershed and relationship between flow and several water quality concerns, conduct preliminary research into water rights in the area, and launch an online presence for flow monitoring. The project created a core hydrology group consisting of staff and volunteers who installed eight continuous recording flow gaging stations from the headwaters to the confluence with the Yuba River and regularly measured discharge at these stations. This data provides vital information regarding flow conditions throughout the year and throughout the watershed, helps inform actions aimed at filling critical flow needs, and determines sediment transport rates as related to mercury transport and salmon habitat - two areas of concern and active restoration in the watershed. An interactive project website (http://www.friendsofdeercreek.org/sierrawatertrust.html) was launched that includes flow data that will be continuously updated. In addition, a comprehensive water rights assessment was completed for the watershed which will help in future flow

augmentation actions. One interesting development is that this work has already been put into a regulatory context with the water rights settlement agreement with the Nevada Irrigation District (NID), who have, as a result of our flow studies, agreed to study the ecological impacts of their dam operations and fall releases out of Scott's Flat reservoir. Progress has also been made in negotiating and advocating for a change in operation at Lake Wildwood to support and improve downstream salmonid habitat.

- **South Yuba River Citizens League**: This partnership focused on investigating and assessing flow issues on Rush Creek, an important tributary to the South Yuba River. Selection of Rush Creek stemmed from concerns of local residents regarding unusually low flows, dry channels, and strange fluctuations in flows. As part of this work, SYRCL researched and developed a flow assessment plan that identified priority flow needs. This research included both a review of existing flow data and documents, as well as interviews with landowners and stakeholders. In addition, one continuous recording gaging station was installed, along with multiple staff plate gages in other areas of this sub-watershed to measure and relate flow and water levels. Streamflow changes in extent of dry channel bottoms, and water quality parameters were monitored monthly as part of the project, and will continue to be monitored in the future by volunteers and staff. The result of this work is summarized in the *Rush Creek Flow Monitoring Report*. A *Rush Creek Map Atlas* was also produced, a useful reference document for future restoration and flow augmentation actions.

C. Challenges or Opportunities Encountered:

One challenge we encountered was that it proved difficult to figure out how to most effectively convey the central concept and goals of the project through our outreach materials – mainly the factsheets and poster. In California, issues of water rights, water transfers, monitoring and quantifying streamflow, and synthesizing all this information into practical actions that benefit both the ecological health of rivers while still providing societal needs is very complex and multifaceted – not an easy premise to get across in outreach format material. In the end, and through multiple iterations, we did create clear and informative products largely due to the strength of project partners. Each partner brought a depth of expertise in an important but different field of knowledge, whether it was outreach/education, scientific expertise, or how to bridge that gap. We filtered out the superfluous, and narrowed in on a central message – the title of the poster sums it up well: "Keep water flowing and be water wise." Both factsheets complimented the poster, delving in-depth into water dedications and the science of measuring and monitoring streamflow.

In addition, the regulatory permitting process for dedicating water instream is one that is currently in a state of flux. While general interest in using water dedications as a tool to protect instream flow has increased in recent years, the actual process of doing so through California's complex system of laws and regulations has yet to be standardized in a manner that can be readily described or implemented in a straightforward and cost effective manner. This posed a significant challenge in writing the report on the benefits and barriers of instream flow dedications. The development of the report however, provided an opportunity to begin to

address some of the current challenges by succinctly identifying current barriers and acting as a starting point for discussion amongst regulatory agency staff and practitioners.

Another issue we encountered was the freezing of state funds. This year-long freeze of our SNC funding resulted in the need to request an extension for our EPA grant so that the timelines would once again match. Having both state and federal funding, however, allowed us to proceed with some aspects of the project despite the freeze.

Lastly, although the project originally intended to focus on institutional arrangements for setting up a water trust in the Sierra, we quickly realized that this task was premature, and that the agency process and coordination at a state level needed to be addressed before 1707 transfers could easily occur. We adjusted our workplan appropriately to help smooth the way at the state level through the development of SWIFT discussed above.

D. Unanticipated Successes Achieved:

The creation of the SWIFT Working Group grew out of both the recognition that very few formal instream flow dedications have occurred in California, and from our research into identifying the barriers that have kept the dedication process from being utilized more often. While the initial intent of bringing together the individuals involved with this working group was primarily to document and describe the process of instream flow dedications, it has also spurred dialogue about potential methods for addressing identified barriers. This group has convened most of the state's experts on instream flow dedications and has provided a forum in which practitioners and agency staff alike can work collaboratively to improve and increase instream flow dedications in California. While this working group is still new, we consider its development a success in that it forms a foundation to support and strengthen future efforts to address and improve instream flow policy and the instream flow dedication process.

Another area of success that we did not anticipate was how eager the watershed groups and the land trusts were to increase their capacity to measure flow, analyze the relationship between flow and water quality, re-think the health of their watersheds within a hydrologic context, and glean onto the idea of using water transfers as a way to help solve problems. In addition, we were surprised how quickly the groups could move from flow data collection and analysis into using that information to advocate for changes in management and policy. For example, and as described above, two of the groups have moved towards petitioning Nevada Irrigation District or California Department of Fish and Game to change their management to meet measured flow needs.

E. Compare Actual Costs to Budgeted Costs:

PROJECT BUDGET CATEGORIES	Budgeted SNC Dollars	Actual Dollars
Finalize Stakeholder List (personnel)	$3,280.49	$3,280.49
Develop Outreach Strategies (personnel)	$4,719.51	$4,290.69
Prepare Outreach Materials (personnel)	$1,131.49	$1,131.49
Plan and Implement Training Sessions (personnel)	$18,000	$17,414.22
Travel	$205.78	$205.78
Develop Outreach Strategies (project partners)	$3,000	$3,000
Prepare Outreach Materials (project partners)	$9,662.73	$9,660
Plan and Implement Training Sessions (project partners)	$5,000	$5,000
GRAND TOTAL	**$45,000**	**$43,982.67**

F. Do you have information to report on the project-specific Performance Measures for your project?

Project-specific activities are described above in Section B. Although the SNC Performance Measures were not available when this contract was awarded, we have tried to address several of the required performance measures below.

Resources Leveraged in the Sierra Nevada

Matching Funds Source	Description	Amount
US Environmental Protection Agency	USEPA Targeted Watershed Initiative Program	$304,078
Partner Watershed Groups	Provided as match as part of small grants program	$88,302
	Total	**$392,380**

Number and Diversity of People Reached

Conservation Groups: 20
(Alpine Watershed Group, Friends of Deer Creek, South Yuba River Citizens League, CalTrout, Central Sierra RC&D, Friends of Hope Valley, The Nature Conservancy, Upper Merced River Watershed Council, California Watershed Network, Friends of the Inyo, Cherokee Watershed Alliance, Restore Hetch Hetchy, Sierra Business Council, Sierra Club, Foothill Conservancy, Scott River Water Trust, CABY, The Nature Conservancy, California Rangeland Trust, Trout Unlimited)

Landowner Groups: 4
(Feather River Land Trust, Washoe Tribe, California Department of Fish & Game, US Forest Service,)

Government Agencies: 7
(California Department of Water Resources, US Geological Survey, Natural Resource Conservation Service, California State Water Resource Control Board, California Department of Fish and Game, USFS, National Fish and Wildlife Foundation)

Users of Sierra Nevada Resources: 5
(Nevada Irrigation District, Carson Water Subconservancy District, East Bay MUD, Lake Wildwood Association, Washoe Meadows Community)

Resource Professionals: 2
(HDR/DTA, Collaborative Decisions)

Number of Collaboratively Developed Plans and Assessments: 8

Friends of Deer Creek:
- Assessment of Flow Augmentation Needs
- Water Rights Assessment

South Yuba River Citizens League:
- Rush Creek Flow Assessment

Feather River Land Trust, Natural Heritage Institute:
- Alternatives for Water Conservation and Management for the Heart K Ranch

Sierra Nevada Alliance:
- Sierra Water Trust Outreach & Communications Strategy

Alpine Watershed Group:
- Upper Carson River Watershed: Synthesis of Completed Studies

Resource Renewal Institute, Natural Heritage Institute:

- Legal Assessment and Recommendations for Water Rights and Scalable Transfer Options in the Sierra Nevada

American Rivers

- Barrier and Benefits Report: Voluntary Instream Flow Dedications for Environmental Benefit in California

G. Were there any other relevant materials produced under the terms of this Agreement that are not a part of the budgeted deliverables? If so, please attach copies.

One ancillary product produced as a result of this and other projects was a how-to manual for installing and monitoring a low-cost streamflow gage. Hardcopies and a CD with electronic copies of this and all other project relevant deliverables and products are included as a part of final reporting, including photos.

H. Next Steps:

This project is now complete.

Capacity-Building Results and Collaboration and Cooperation with Stakeholders:

This project initiated and strengthened many collaborations and partnerships, as well as increased the capacity of American Rivers to become a central player and voice in water transfers in California. Below we discuss in more detail some of these partnerships.

Sierra Nevada Alliance:
SNA was an invaluable partner on this project in developing, guiding, and implementing outreach strategies. We plan to continue working with them in a similar capacity on the follow up to this project, the CABY Water Trust Project. As a central hub for watershed groups in the Sierra, this partnership is crucial to future outreach and success. In addition, SNA is now up to speed on the concept and potential application of water transfers for instream flows.

Friends of Deer Creek:
We have worked with FODC on several projects in the past. The partnership that resulted from this project strengthened that relationship and pointed to several areas centered around flow augmentation in Deer Creek where we might continue to collaborate. The extensive flow monitoring network we established with them combined with the water rights assessment will inform future collaborations in the Deer Creek watershed, particularly as it relates to our work on establishing a Blue Water Bank at Nevada City, and through on-going negotiations with NID regarding re-managing their upstream reservoir to naturalize fall flows.

Feather River Land Trust:
Working with Feather River Land Trust was a new partnership for American Rivers, and a unique one for the project in that the Land Trust owned land with appurtenant water rights in the Feather River watershed. Being a water right holder gave us an opportunity to explore options for more creative and efficient water management strategies. We plan on seeking further funding together to move forward with the preferred water management alternatives identified in the project's assessment report which will create a model for water transfers for instream flows by a land trust in the Sierra.

South Yuba River Citizen's League:
This project strengthened an already strong relationship between American Rivers and SYRCL. We made solid progress in investigating flow issues in sub-watersheds to the South Yuba River, and plan on working closely in the future on issues of flow and habitat on this important and iconic river, particularly in relationship to water quality and salmon habitat issues.

Alpine Watershed Group:
The relationship with the Alpine Watershed Group was also a new and very productive partnership for American Rivers. This project centered on strengthening local ties and relationships with stakeholders in the Upper Carson watershed, so that issues of flow could be explored and discussed transparently at a community level. An ancillary and inter-related goal was to investigate current flow conditions and set up monitoring

stations in strategic locations in order to better understand current hydrology and to identify critical areas for augmentation. During the period of this project we also started working with AWG on a meadow restoration project in Hope Valley, which overlaps with our flow analysis and monitoring work from this project – so one fed into the other in a very valuable way.

SWIFT Working Group:
The core members of the SWIFT Working Group include staff from American Rivers, Trout Unlimited, Scott River Water Trust, and River Right. While we all were previously familiar with one another's work and most had coordinated with others in the group on site-specific projects, the development of the working group has strengthened our partnerships and has provided an opportunity to combine our resources and expertise in addressing the state-level water policy and regulatory issues that have a profound influence on our individual work. Also, as part of SWIFT, we have opened communications and developed strong working relationships with the staff focused on 1707 water transfers at the State Water Resources Control Board and at California Department of Fish and Game.

Description of Project Accomplishments:

1. Most Significant Accomplishment

The Sierra Water Trust project involved a variety of projects at the state, watershed, and site-specific scale. A common thread among each of these tasks, and a significant accomplishment of the project as a whole, was increased dialogue about the importance of instream flows across the myriad of watershed stakeholders. It is well recognized by the public at-large that water or instream flow is a critical component of what makes a stream a stream. How to monitor stream flow, understand how much is needed, and how to protect and improve stream flow conditions however, is a mystery to most people and a task too great for a small handful of individuals to adequately address. By bringing together technical experts, community organizers, and local citizens we were able to educate one another, combine resources, and increase awareness of the issue throughout the Sierras.

2. WOW Factor

The development of the SWIFT Working Group has brought together the primary experts on instream flow dedications in California and has initiated a collaborative effort amongst both practitioners (water trusts, conservation organizations, water law attorneys) and regulatory agency staff (State Water Resources Control Board and California Department of Fish and Game) to jointly address some of the barriers to instream flow transfers that have prevented significant use of instream flow dedication provisions of the State's Water Code over the past 20 years. As a result of this effort, at a meeting in early 2012, the head of the water rights division for the State Water Resources Control Board informed SWIFT and others that the Board was now prioritizing 1707 transfers amongst all water transfer petitions in the State. What this means is that when and if 1707 water

transfers petitions arrive at the Board, they will immediately be put at the top of the pile of water transfers and staff will give them priority for processing.

Another surprising result of the project was discovered in a preliminary survey that the Alpine Watershed Group sent out to water rights holders in their watershed. First, the return rate of the survey was high, and second, several of the water rights holders indicated that they would be willing to talk about transferring their water right to instream flows. We did not anticipate that any water right holders would make this initial offer without significant up-front outreach and education. This result made us realize that there might be many more readily willing sellers/donators in the Sierra than we anticipated.

3. Design and Implementation

Protecting and enhancing instream flows is a watershed-wide issue that takes partnerships at all levels of implementation. We found that locally based watershed groups are critical for organizing volunteers and establishing relationships with local water rights holders and landowners. At the same time, these groups often lack the technical expertise or resources needed to conduct thorough water use and availability studies. Experts in hydrology and water law often understand the complexities of hydrological analysis and regulatory permitting but lack local knowledge and are often not located near monitoring sites. Combining the resources of all groups of stakeholders through working groups and workshops is essential.

4. Indirect Impact

Please describe any indirect benefits of the project such as information that has been developed as a result of the project is being used by several other organizations to improve decision-making, or a conservation easement funded by this grant that encouraged other landowners in the area to have conservation easements on their property.

The fact sheets that were developed as part of the outreach and education components of this project will be used as templates for the development of similar water rights and instream flow monitoring guides for other states in which American Rivers is actively working to protect and improve instream flows.

In addition, the template and process that American Rivers developed in assisting watershed groups and land trusts in understanding both how important flow issues are to watershed health and how water rights and transfer of water rights might fit into their restoration goals will be used for further capacity-building work in the Sierra that we have planned.

5. Collaboration and Conflict Resolution

There were no significant conflicts encountered during this project. The following section on "Capacity-Building Results and Collaboration and Cooperation with Stakeholders" provides descriptions of collaborations that took place as part of this project.

6. Capacity-Building

American Rivers: One of American River's primary program areas is water supply which is largely focused on protecting and enhancing instream flows. The Sierra Water Trust project kick-started American River's efforts to address instream flow needs in California. The California Regional office of American Rivers hired a full time staff member in early 2011 whose primary work will be to grow and expand instream flow protection efforts in California at the site-specific, watershed, and state policy scale.

In addition, the California Regional Office is in the process of developing a strategic plan for our work in California, including the Sierra. We have completed a draft of the plan and will be hiring an outside consultant through a capacity-building grant from the Bechtel Foundation, to help us finalize the plan. In addition, we now have two board members from California on our national board, Dan Reicher and Jeff Mount, and are in the process of establishing a California Regional Advisory Board. In addition, to our office in Nevada City which has now grown to 13 staff, we have opened an office at the Brower Center in Berkeley.

As described above, through our small grants program, we completed four successful projects aimed at increasing the capacity of local watershed groups to monitor, assess, and address flow augmentation needs and water rights in their watersheds. The program provided funding for staff time and equipment, as well as, technical assistance to each group. Each grant was tailored to the specific needs of the organization. Working with the Sierra Nevada Alliance, we identified groups that would benefit from this type of capacity-building, had staff to devote to these activities, could provide the required match, and could also sustain the work over time. For each of these groups, we developed a detailed scope of work and timeline to ensure that our mutual expectations were clear regarding the work to be done, and respective roles.

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Ranch. This document will be useful in seeking funding to implement chosen water management approaches.

- **Alpine Watershed Group**. The subgrant with the Alpine Watershed Group provided funding and assistance in the Upper Carson River Watershed to: 1) analyze existing hydrological records; 2) identify areas in need of flow monitoring; 3) increase streamflow monitoring efforts in these identified reaches; and 4) conduct a preliminary survey of water rights and gage public receptivity to water transfers. The project convened a core group of volunteers and provided training to this group to synthesize existing data and records for the area to identify priority monitoring sites, conduct streamflow measurements and monitoring activities, install four continuous recording flow gaging stations, and complete a voluntary mail-in water rights survey in the community. The flow gages will help determine critical areas in need of flow augmentation, and will help in the planning phases for future restoration projects, including our Hope Valley Meadow Restoration Project. We're also using our flow gage network to better characterize the existing flow regime in Red Lake Creek as a result of releases out of Red Lake, managed by the California Department of Fish and Game (DFG). This will enable us to develop a more scientifically-based management regime of flows out of Red Lake, something that has been identified as a potential source of flow augmentation and habitat improvement in both Red Lake Creek and the West Fork Carson River, which converge in Hope Valley Meadow. CDFG is interested in improving management of Red Lake and has been a valuable partner in pursuing these goals.

- **Friends of Deer Creek**. The subgrant with Friends of Deer Creek aimed to improve flow monitoring in the Deer Creek Watershed, determine flow augmentation needs in the watershed and relationship between flow and several water quality concerns, conduct preliminary research into water rights in the area, and launch an online presence for flow monitoring. The project created a core hydrology group consisting of staff and volunteers who installed eight continuous recording flow gaging stations from the headwaters to the confluence with the Yuba River and regularly measured discharge at these stations. This data provides vital information regarding flow conditions throughout the year and throughout the watershed, helps inform actions aimed at filling critical flow needs, and determines sediment transport rates as related to mercury transport and salmon habitat - two areas of concern and active restoration in the watershed. An interactive project website (http://www.friendsofdeercreek.org/sierrawatertrust.html) was launched that includes flow data that will be continuously updated. In addition, a comprehensive water rights assessment was completed for the watershed which will help in future flow augmentation actions. One interesting development is that this work has already been put into a regulatory context with the water rights settlement agreement with the Nevada Irrigation District (NID), who have, as a result of our flow studies, agreed to study the ecological impacts of their dam operations and fall releases out of Scott's Flat reservoir. Progress has also been

made in negotiating and advocating for a change in operation at Lake Wildwood to support and improve downstream salmonid habitat.

- **South Yuba River Citizens League**: This partnership focused on investigating and assessing flow issues on Rush Creek, an important tributary to the South Yuba River. Selection of Rush Creek stemmed from concerns of local residents regarding unusually low flows, dry channels, and strange fluctuations in flows. As part of this work, SYRCL researched and developed a Flow Assessment Plan that identified priority flow needs. This research included both a review of existing flow data and documents, as well as interviews with landowners and stakeholders. In addition, one continuous recording gaging station was installed, along with multiple staff plate gages in other areas of this sub-watershed to measure and relate flow and water levels. Streamflow, changes in extent of dry channel bottoms, and water quality parameters were monitored monthly as part of the project, and will continue to be monitored in the future by volunteers and staff. The result of this work is summarized in the *Rush Creek Flow Monitoring Report*. A *Rush Creek Map Atlas* was also produced, a useful reference document for future restoration and flow augmentation actions.

7. Challenges

One of the initial goals of this project was to implement formal instream flow dedications in the Sierra. Through the process of this project we discovered that the ability to do this in most Sierra watersheds is a ways off due to both lack of local expertise and stream data as well as a variety of barriers and uncertainties related to regulatory permitting that exist on the state level. During the implementation of the Sierra Water Trust project we attempted to address these issues both locally on the ground and on a state policy level. Through our small grants program we were able to increase the capacity of local watershed groups by increasing the availability and understanding of stream flow data and providing trainings and outreach material such that local stakeholders are ready to take the next steps towards instream flow protection and improvement. Regarding state level policy and regulation, we identified the current barriers that limit instream flow dedications. These barriers include lack of existing water use records, lack of monitoring data, lack of a clear process among agencies for reviewing and processing 1707 applications, and environmental permitting practices that deter otherwise willing water rights holders from making changes to their water rights and water use practices for environmental benefit. While addressing the identified barriers is outside the scope of the Sierra Water Trust project, we were able to prompt dialogue between practitioners and regulatory agency staff, which we feel is an important first step towards addressing these issues.

8. Photographs

Please see CD included with this report for many project photos. A few of our favorites are seen below.

Streamflow measurement and monitoring training for volunteers from the Alpine Watershed Group, Friends of Hope Valley, CalTrout, and Central Sierra RC&D (West Fork Carson River, Hope Valley Meadow)

Installing stream gage plates for our flow gage station on the West Fork Carson River

Touring Red Lake to explore the potential for improved management

9. Post Grant Plans

In spring of 2012 American Rivers will begin efforts to improve instream flow protection capacity in the Cosumnes, American, Bear, Yuba (CABY) region as part of the CABY IRWMP planning process. This effort will include the identification of key instream flow protection needs and opportunities in each watershed, the development of a regional stakeholder group, and the development of an education outreach strategy for protecting and addressing instream flow needs in the region. Data collected by the South Yuba River Citizens League and Friends of Deer Creek as part of the Sierra Water Trust project in the Yuba Watershed will be utilized in this planning process. Additionally, it is anticipated that the Sierra Region Stakeholders List developed by SNA will assist in identifying key stakeholders specific to the CABY region.

The SWIFT Working Group will continue to convene and is in the process of developing grant proposals to start addressing some of the barriers to instream flow dedications that have been identified. A few specific tasks include: working with State Water Resources Control Board staff to make existing instream flow and 1707 transfer information more prominent and readily accessible on the Division of Water Rights website, develop a guidelines handbook for 1707 transfer applicants, and work with Department of Fish and Game staff to develop protocols specific to assessing the environmental impacts associated with water rights transfers that involve instream flow dedications through the 1707 transfer process.

Sierra Water Trust small grant organizations (SYRCL, FODC, AWG, FRLT) plan to continue their monitoring efforts and we are actively in communication in seeking further funding together for next steps on projects in respective watersheds.

10. Post Grant Contact

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